

EX PARTE OR LATE FILED
HALPRIN, TEMPLE, GOODMAN & MAHER

555 12TH STREET, N.W., SUITE 950 NORTH
WASHINGTON, D.C. 20004
(202) 371-9100 TELEFAX (202) 371-1497
HTTP://WWW.HTGM.COM

ORIGINAL

ALBERT HALPRIN
RILEY K. TEMPLE
STEPHEN L. GOODMAN

WILLIAM F. MAHER, JR.
JOEL BERNSTEIN
RICHARD T. WHITE, JR.

April 6, 2000

RECEIVED
APR - 6 2000
FCC MAIL ROOM

Ms. Magalie Roman Salas
Secretary, Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: *Deployment of Wireline Services Offering Advanced Telecommunications*
Capability -- CC Docket No. 98-147

Ex parte presentation pursuant to C.F.R. §1.1206(a)(1)

Dear Ms. Salas:

Catena Networks, Inc. ("Catena") met yesterday afternoon with Michelle Carey, Margaret Egler, Jake Jennings and Julie Patterson of the Policy and Program Planning Division of the Common Carrier Bureau. Jim Hjartarson, Gary Bolton and the undersigned counsel for Catena attended the meeting on behalf of Catena. During the meeting, Catena addressed its products and deployment of those products in the network. Some of those discussions touched on issues raised in the above-captioned proceeding.

Attached hereto for inclusion in the record are two copies of the materials that were discussed and passed out at the meeting. Please contact the undersigned if you have any questions with regard to this submission.

Respectfully submitted,


Stephen L. Goodman
Counsel for Catena

cc (w/o enc): Michelle Carey
Margaret Egler
Jake Jennings
Julie Patterson

No. of Copies rec'd 
List ABCDE 0

Catena Networks

Broadband enabling every telephone line on Earth

Ex parte Presentation

Docket No. ____

Gary Bolton
Vice President, Product Marketing
April 5, 2000

Catena Networks



Network Trends

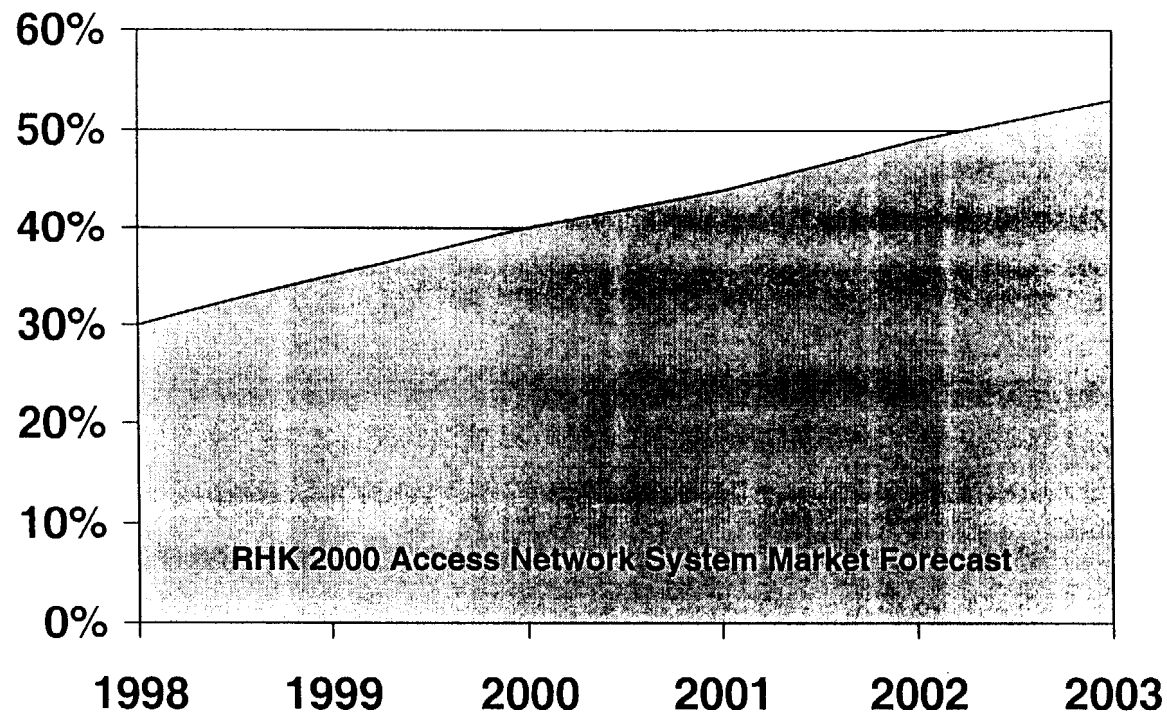
- **Over 50% of the traffic on today's Voice network is Data**
 - Growth of Internet had driven the demand for Advanced Services
 - The existing reliable circuit switched Voice Network is not designed to handle bursty Data traffic
 - 36CCS analog modem traffic severely impacts Networks designed for 4-6CCS
- **The Voice and Data networks are converging**
 - 37 new companies developing the Packet Class 4/5 Replacement Soft Switches (VON 3/00)
 - Voice can be delivered in the Data traffic - Derived Voice via Voice over DSL technologies
- **Integration of Voice and Data is critical to driving down cost, speeding deployment**
 - Integration of separate access elements is the foundation for cost reduction in network architectures
- **Investment in technology innovation is growing exponentially**
 - \$13.4B venture funding was poured into Silicon Valley companies in 1999 (San Jose Mercury News 2/6/00)
 - \$5.68B was invested in 358 companies in 4Q99 alone (vs previous 1yr record of \$4.5B for all of 1998)
 - *".....the Internet remains the driving force."*

Catena Networks



Access Trends

Access Lines served by RTs

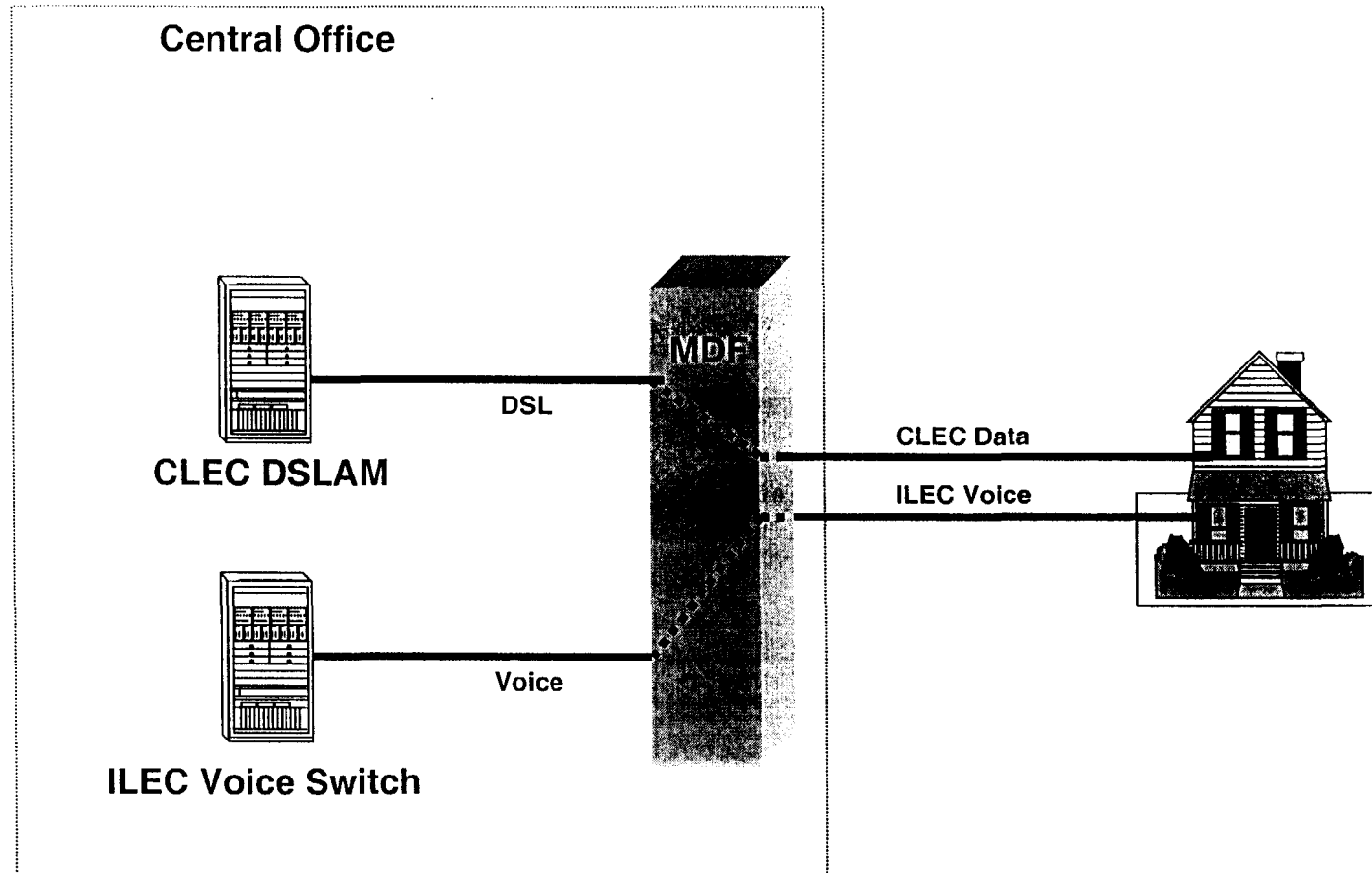


***Within 3 years, the major of subscribers will
be served off Remote Terminals (RTs)***

Catena Networks



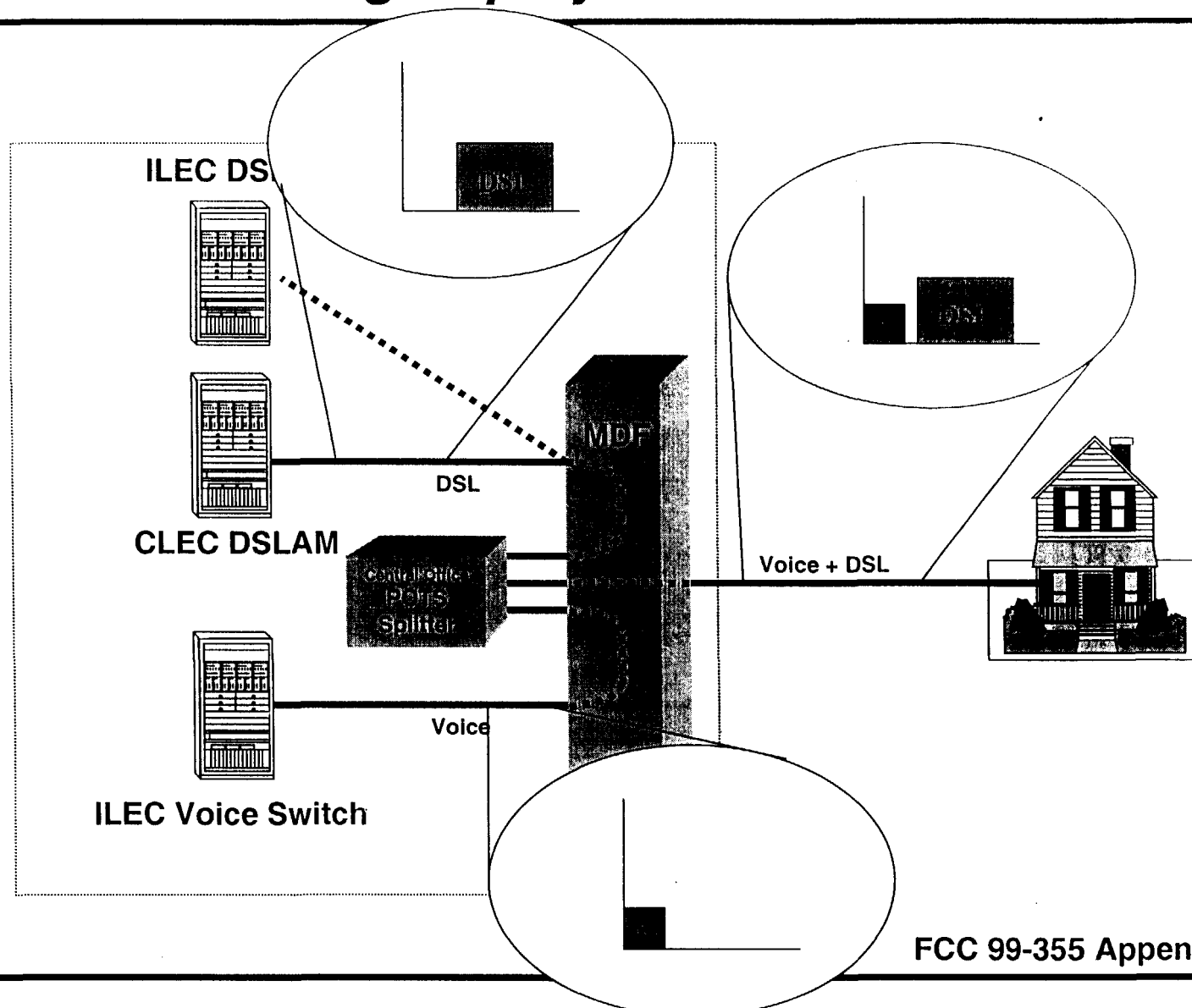
Before Line Sharing



Catena Networks



FCC's Line Sharing Deployment Model



FCC 99-355 Appendix C

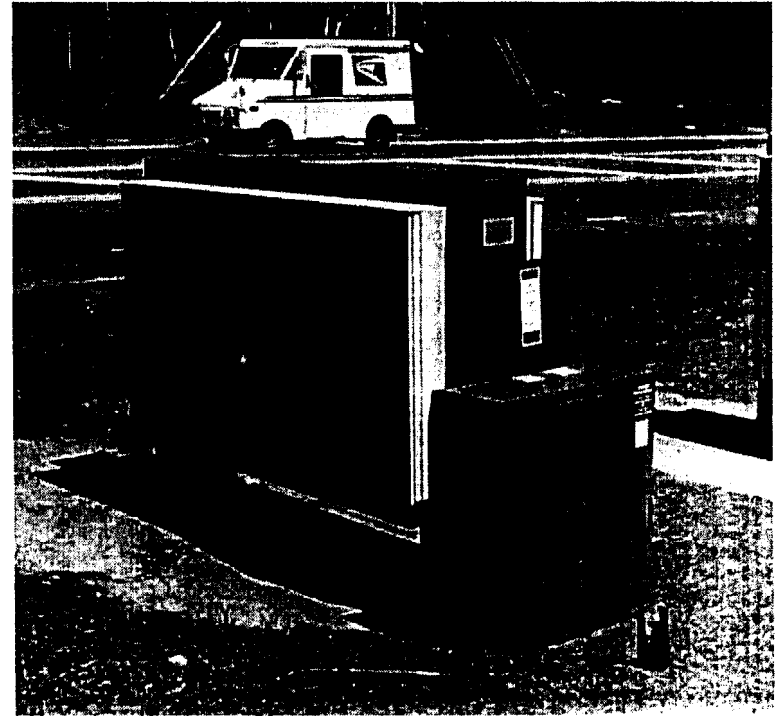
Catena Networks



What about Digital Loop Carriers (DLCs)?

DLCs deployed for “pair gain” benefits

- **Over 35% of subscribers are served off DLC**
- **Over 60% of new lines deployed**
- **50% of the target ADSL subscribers are served off DLCs**



ADSL solution required in DLCs to address mass market

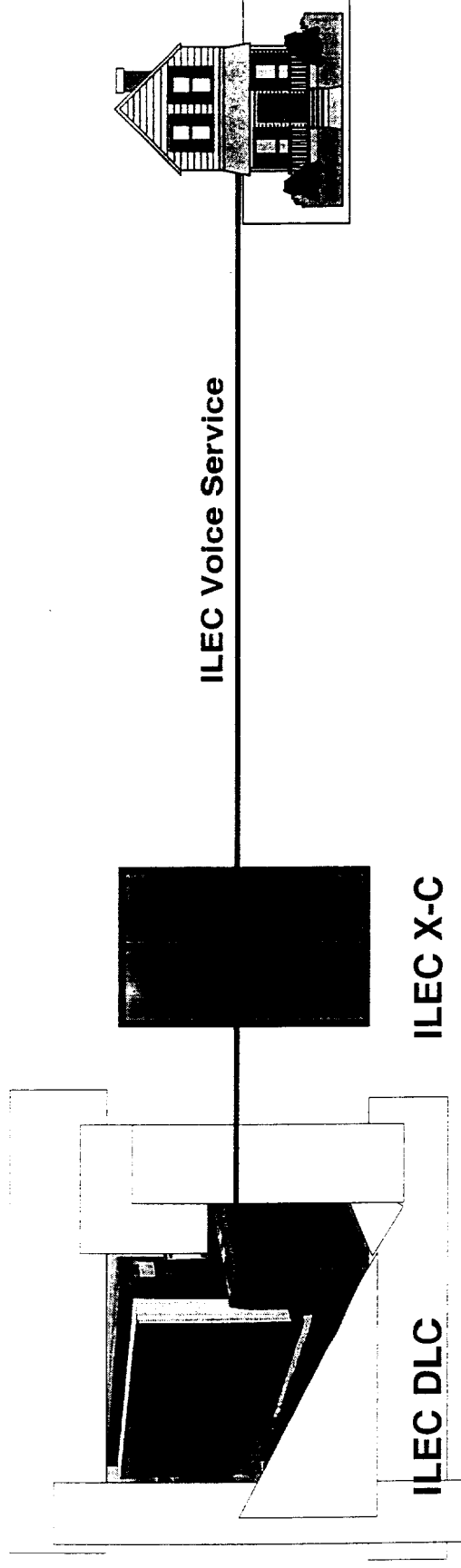
Sources:

RHK, Ovum, Americas Network

Catena Networks



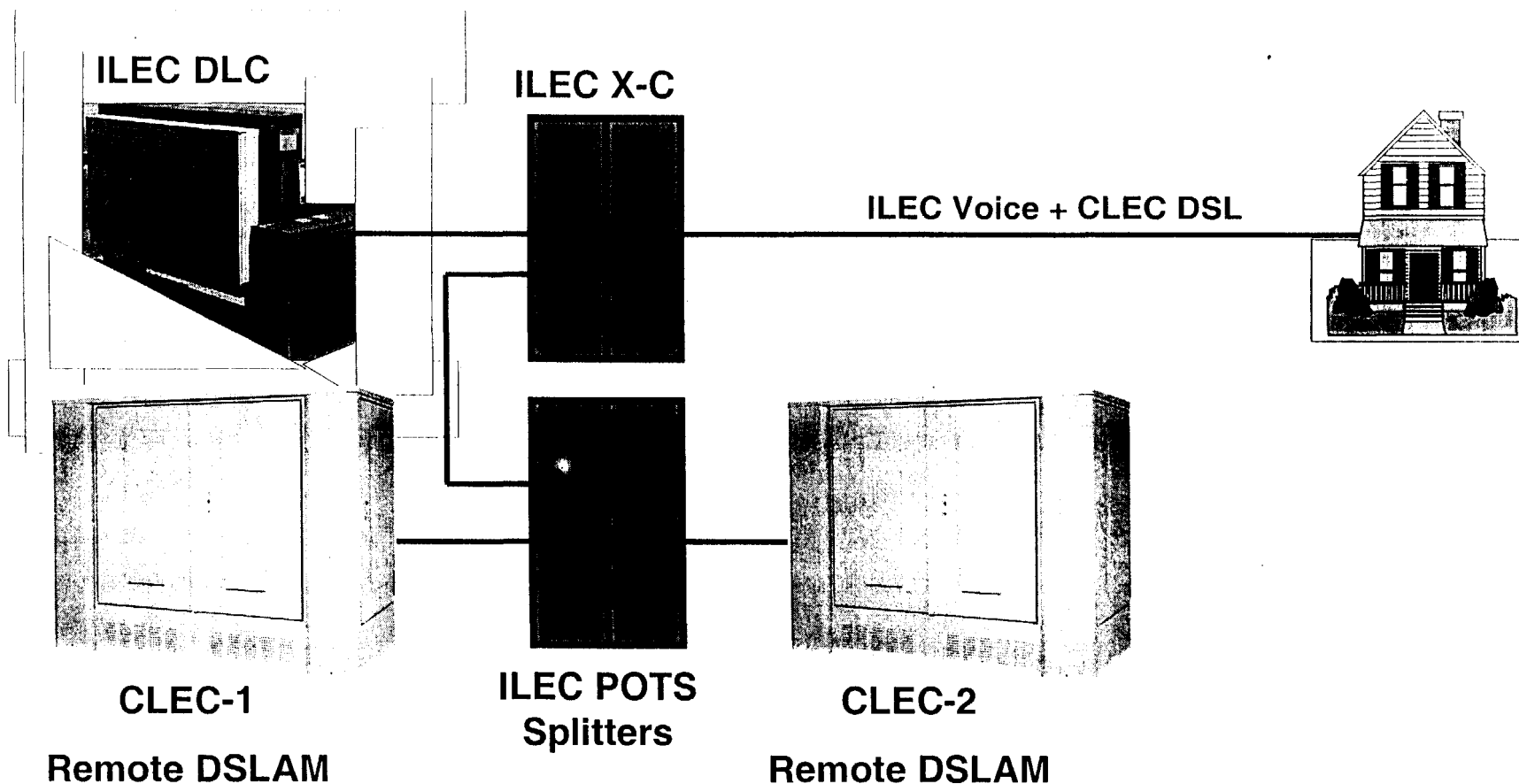
Today's DLC Deployment Model



Catena Networks



Implementing Line Sharing on DLCs



Catena Networks



DLC Line Sharing Issues

- **Limited Availability of Real Estate**

- Right Of Way constraints
- Esthetics
- Cabinet Farm at the edge of neighborhoods

- **Cost Prohibitive to CLEC**

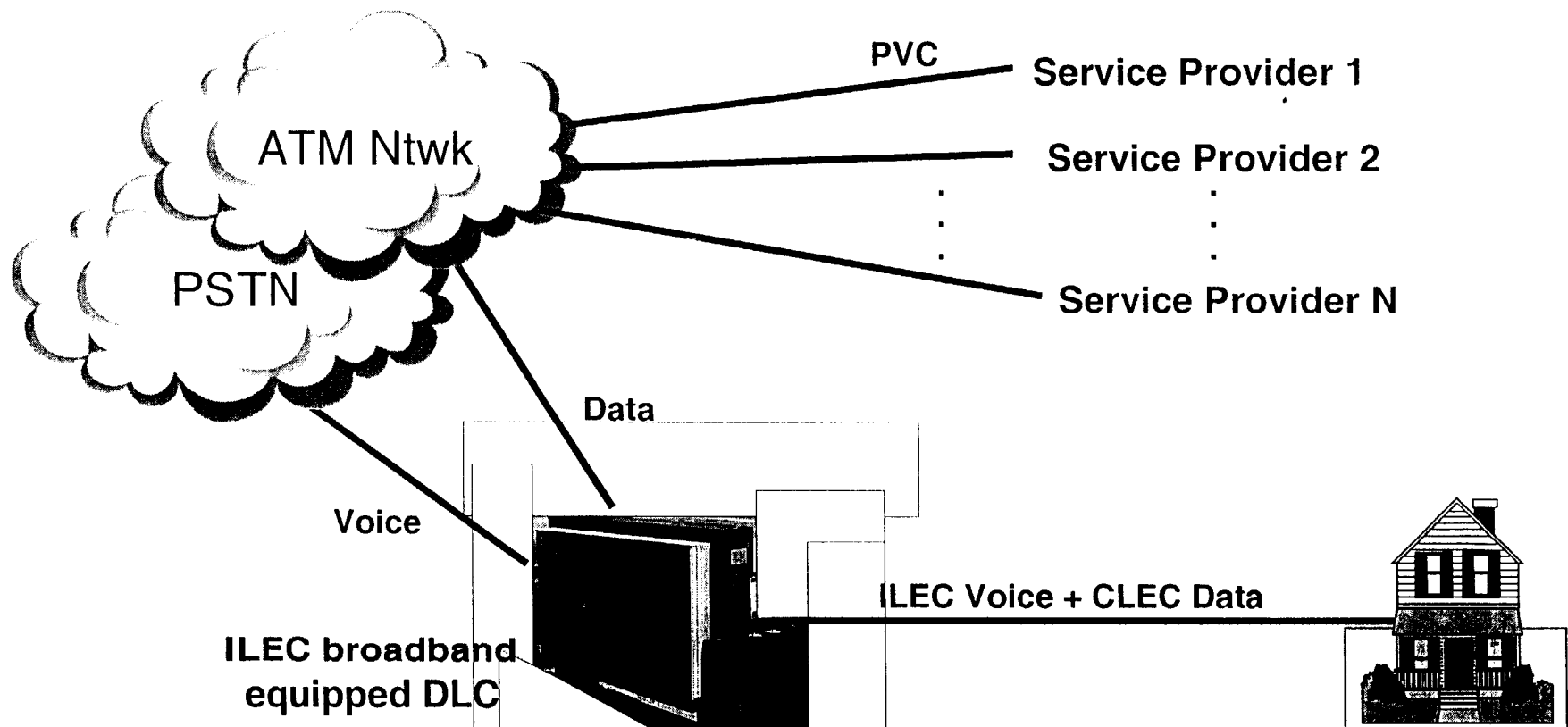
- Addressing limited number of subscribers (vs. Central Office application)
- Cost up to \$80K for OSP Cabinet, pour concrete slab and installation (not including the electronics!)
- Expensive back haul facilities (for limited number of subscribers)

Physical Line Sharing is not practical in most DLC applications

Catena Networks



Virtual Unbundling



***Service Providers share common facilities
(speeds deployment, minimizes cost)***

Catena Networks



Broadband Equipped DLCs

New Installations:

- 3GDLCs can be provisioned with integrated Voice+DSL line cards

Legacy DLCs:

- Swap out existing POTS line card with integrated Voice+DSL line cards and ATM uplink card

DLC space, power and cost constraints can be addressed with integrated Voice+DSL line cards



Virtual Co-location

- CLEC provides Integrated Voice+DSL line card to ILEC
- ILEC installs plug in DLC
- CLEC provisions, monitors and maintains DSL service via partitioned EMS interface
- DSL traffic is routed thru the ATM network and delivered to the CLEC via PVC



Conclusions

- Millions of *target* DSL subscribers are served off DLCs
- Physical Line Sharing is not practical in many DLC applications
 - Separate Voice, DSLAM and POTS Splitter facilities are not practical when:
 - Space, Power, Cost are at a premium
 - Competing for limited number of subscribers (small serving areas)
- Integrated Voice+DSL Line Cards will be implemented in DLCs
 - Speed DSL deployment
 - Maximize economic efficiencies



Key Considerations

Guiding Principles

- The FCC seeks to promote competition and accelerate widespread deployment of affordable advanced services to all Americans; Congress explicitly adopted this policy in section 706 of the 1996 Act
- The subscriber is the target beneficiary of this laudable policy

Key Considerations

- Network evolution is driving to the packetization of voice and data services
- Integration of Access elements is fundamental to driving down cost and accelerating widespread deployment
 - Integrated POTS+ADSL solutions in RTs provide significant technical and economic efficiencies (vs overlay solutions)
- Mechanical POTS Splitters strand 27KHz of premium bandwidth and add unnecessary cost and complexity to the access network
- Policy should allow maximum flexibility for the market place to leverage competitive technology innovations to maximize network economic efficiencies
 - The FCC should not allow or encourage single vendor solutions, limiting competition and innovation

Catena Networks



Recommendations

Access Network Evolution

- **As fiber is pushed deeper in towards the subscriber, the number of subscribers per RT decreases.**
 - The economic and practical incentives for multiple service providers to amortize the subscribers over common RT and back-haul facilities significantly increases.
- **This approach allows services in the RT to be turned on and off remotely and electronically, thus minimizing network operations costs**
 - This will speed service deployment and accelerates multiple competitive service providers' access to the subscriber base

Recommendations

- **Integrated POTS + ADSL line cards are the most cost effective and network efficient means for deploying advanced services in Remote Terminals (RTs), reducing the barrier to entry for competitive access providers**
 - This approach allows the number of competing service providers in an RT to equal the number of loops terminated
 - The technology is feasible in many RT platforms including many legacy products.
 - Single vendor solutions are anti-competitive and limit technology innovation
- **Multiple back-haul topologies should be allowed to maximize network efficiency.**
 - Any ruling should allow for both integrated and separate voice and data back-haul facilities using multiple transmission technologies including T1, T3, Sonet and WDM fiber technologies.

Catena Networks

